

Amendments to the Claims:

Please amend claims 3, 4 and 7-11 as indicated below.

Please cancel claims 12-17 without prejudice.

Please add new claims 18-21 as presented below.

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (original): A method for locating specimen regions of interest in a stimulatable microscopic specimen, comprising the following steps:

- introducing into the specimen of at least two stimulation-specific stains that emit light of different wavelengths;
- illuminating at least a portion of the specimen with at least one illuminating light beam;
- initiating a stimulation;
- detecting the light emerging from the stimulation-specific stains; and
- identifying the spatial position of the regions within the portion of the specimen from which light of at least two different wavelengths that are emission wavelengths of the stimulation-specific stains is emerging.

Claim 2 (original): The method as defined in Claim 1, wherein detecting the light emerging from the stimulation-specific stains is accomplished in temporal correlation with initiation of the stimulation.

Claim 3 (currently amended): The method as defined in Claim 1, wherein introducing of at least two stimulation-specific stains encompasses the introduction by genetic engineering of fluorescing proteins, ~~in particular of GFP.~~

Claim 4 (currently amended): The method as defined in Claim 1, wherein the introducing of at least two stimulation-specific stains encompasses the introduction of indicators, ~~in particular calcium indicators~~.

Claim 5 (original): The method as defined in Claim 1, wherein stimulating comprises the application of an electrical voltage.

Claim 6 (original): The method as defined in Claim 1, wherein illuminating of the specimen comprises, an illuminating light beam guided with a beam deflection device on a defined path over or through the specimen.

Claim 7 (currently amended): The method as defined in Claim 6, wherein data concerning the deflection position of the beam deflection device are used for identification of the spatial position of the regions within the portion of the specimen.

Claim 8 (currently amended): The method as defined in Claim 1, wherein the regions within the portion of the specimen are displayed to the user on a means for display.

Claim 9 (currently amended): The method as defined in Claim 1, wherein the specimen is a biological specimen, ~~in particular a nerve cell tissue~~.

Claim 10 (currently amended): The method as defined in Claim 9, wherein the regions ~~of interest~~ within the portion of the specimen are contact points between nerve cells.

Claim 11 (currently amended): The method as defined in Claim 1, wherein a scanning microscope, ~~in particular a confocal scanning microscope~~, is used.

Claims 12-17 (canceled)

Claim 18 (new): The method as defined in Claim 3, wherein the fluorescing proteins include GFP.

Claim 19 (new): The method as defined in Claim 4, wherein the indicators include calcium indicators.

Claim 20 (new): The method as defined in Claim 9, wherein the biological specimen includes a nerve cell tissue.

Claim 21 (new): The method as defined in Claim 11, wherein the scanning microscope includes a confocal scanning microscope.